6. (Once amended) The reagent of claim 1 which has the general formula:

$$\mathbf{A\text{-}B^1\text{-}X^1\text{-}(CH_2)_n\text{-}[X^2\text{-}(CH_2)_m\ ]_x\text{-}X^3\text{-}(CH_2)_p\ \text{-}X^4\text{-}B^2\text{-}PRG}$$

where: A is the affinity label;

PRG is the protein reactive group; and

B^1-X^1-$(CH_2)_n$-$[X^2$-$(CH_2)_m\ ]_x$-X^3-$(CH_2)_p$ -X^4-B^2 is the linker group wherein:

X^1, X^2, X^3 and X^4, independently of one another, and X^2 independently of other X^2, can be selected from the group consisting of O, S, NH, NR, NRR'$^+$, CO, COO, COS, S-S, SO, SO_2, CO-NR', CS-NR', Si-O, and aryl or diaryl groups or X^1-X^4 may be absent;

B^1 and B^2, independently of one another, are optional groups selected from COO, CO, CO-NR', CS-NR', ($CH_2)_q$-CONR', $(CH_2)_q$-CS-NR', or $(CH_2)_q$;

n, m, p, q and x are whole numbers that can take values from 0 to about 100, where the sum of n+xm+p+q is less than about 100;

R is an alkyl, alkenyl, alkynyl, alkoxy or an aryl group that is optionally substituted with one or more alkyl, alkenyl, alkynyl, or alkoxy groups; and

R' is a hydrogen, an alkyl, alkenyl, alkynyl, alkoxy or an aryl group that is optionally substituted with one or more alkyl, alkenyl, alkynyl, or alkoxy groups

wherein one or more of the CH_2 groups in the linker can be optionally substituted with alkyl, alkenyl, alkoxy groups, an aryl group that is optionally substituted with one or more alkyl, alkenyl, alkynyl, or alkoxy groups, an acidic group, a basic group or a group carrying a permanent positive or negative charge; wherein one or more single bonds linking non-adjacent CH_2 groups in the linker can be replaced with a double or a triple bond and wherein one or more of the atoms in the linker can be substituted with a stable isotope.